

## **VIRION-BASED FUSION ASSAY**

### **ABSTRACT OF THE DISCLOSURE**

**[00166]** The present invention features methods and compositions relating to a virion-based fusion assay for detection of infection of a target cell by an enveloped retroviral virion such as HIV. The assay uses virions containing a chimeric viral protein comprising a viral accessory polypeptide (such as Vpr) fused to a reporter polypeptide (such as beta-lactamase). Fusion of the virion with a target cell membrane results in intracellular delivery of the chimeric protein to the target cell , which in turn provides for detection of a detectable signal mediated by the reporter polypeptide portion of the chimeric polypeptide. Significant detectable signal is only detected following intracellular delivery of the chimeric viral protein, thus providing for detection of productive viral entry to the exclusion of non-productive, endocytic entry of virions into the cell.